

Amendments to the Claims

Claim 1 (Original): A sunscreen composition comprising:

- a) a carotenoid or a carotenoid derivative having sunscreen activity;
- b) a polyphenolic compound or a polyphenolic compound derivative having sunscreen activity;
- c) a light absorbing amino acid having sunscreen activity or a light absorbing amino acid derivative having sunscreen activity; and
- d) a carrier.

Claim 2 (Original): The composition of claim 1, wherein the carotenoid comprises a cyanobacterial carotenoid.

Claim 3 (Currently amended): The composition of claim 2, wherein the carotenoid comprises a compound selected from the group consisting of β -carotene, lutein, neoxanthin, zeaxanthin, ~~vieilaxanthin~~ violaxanthin, antheraxanthin, caloxanthin, nostoxanthin, echinenone, ~~canthexanthin~~ canthaxanthin, oscillaxanthin and myxoxanthophyll.

Claim 4 (Original): The composition of claim 1, wherein the polyphenolic compound comprises a cyanobacterial polyphenolic compound.

Claim 5 (Original): The composition of claim 4, wherein the polyphenolic compound comprises scytonemin.

Claim 6 (Original): The composition of claim 1, wherein the amino acid comprises a mycosporine amino acid.

Claim 7 (Original): The composition of claim 6, wherein the mycosporine amino acid comprises a compound selected from the group consisting of mycosporine-glycine, palythine, asterina-330, palythinol, palythene, porphyra-334, mycosporineglycine: valine and shinorine.

Claim 8 (Original): The sunscreen composition of claim 1, further comprising at least one cosmetically acceptable adjuvant or additive.

Claim 9 (Original): A sunscreen composition comprising a carrier and an effective amount of a heteroautotrophic cell extract or a photoautotrophic cell extract, the extract having sunscreen activity, the cells having been cultured under conditions of high excitation pressure.

Claim 10 (Original): The composition of claim 1 wherein the carrier is at least one of either water, a gas, a water-based liquid, an oil, a gel, an emulsion, a dispersion or a mixture thereof.

Claim 11 (Original): A personal care product comprising the composition of claim 1.

Claim 12 (Original): A method for protecting the human skin, human hair or another surface from solar radiation, comprising topically applying thereto an effective amount of the sunscreen composition of claim 1.

Claims 13-18 (Cancelled):

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Claim 19 (Original): The composition of claim 1, wherein the amino acid or amino acid derivative is selected from the group consisting of tyrosine, tryptophan, a tyrosine derivative having sunscreen activity and a tryptophan derivative having sunscreen activity.

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Claim 20 (New): The composition of claim 1, wherein the carrier comprises water, a gas, a water-based liquid, an oil, a gel, an emulsion, an oil-in-water emulsion, a water in-in-oil emulsion, a dispersion or a mixture thereof.

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Claim 21 (New): The composition of claim 8, wherein the adjuvant or additive comprises a preservative, an organic solvent, a browning agent, an antioxidant, a stabilizer, an emollient, silicone, an alpha-hydroxy acid, a demulcent, an anti-foaming agent, a moisturizing agent, a vitamin, a fragrance, an ionic thickener, a non-ionic thickener, a surfactant, a filler, a thickener, a sequestrant, a polymer, a propellant, an alkalinising agent, an acidifying agent, an opacifier, a fatty compound or a colorant.

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Claim 22 (New): The composition of claim 9, wherein the extract comprises:

- a) a carotenoid or a carotenoid derivative having sunscreen activity;
- b) a polyphenolic compound or a polyphenolic compound derivative having sunscreen activity;
- c) a light absorbing amino acid having sunscreen activity or a light absorbing amino acid derivative having sunscreen activity; and
- d) a carrier.

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Claim 23 (New): The composition of claim 22, comprising a carotenoid, the polyphenolic compound comprising scytonemin and the amino acid comprising a mycosporine amino acid.

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Claim 24 (New): The composition of claim 9, wherein the extract is present in an amount selected from the group consisting of 0.1% to 25% by weight and 0.1% to 10% by weight.

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Claim 25 (New): The composition of claim 9, comprising a photoautotrophic cell extract from photoautotrophic bacteria, photoautotrophic plants or photoautotrophic fungi.

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Claim 26 (New): The composition of claim 25, wherein the photoautotrophic cell extract comprises an extract from cyanobacteria.

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Claim 27 (New): The composition of claim 9, wherein the photoautotrophic cell extract comprises a cyanobacterial extract comprising myoxanthophyll, scytonemin and mycosporine amino acid.

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Claim 28 (New): The composition of claim 9, wherein the photoautotrophic cell extract comprises a cyanobacterial extract and the conditions of high excitation pressure comprise i) about 15°C and a light intensity of about 150 $\mu\text{mol m}^{-2}\text{s}^{-1}$ or ii) about 29°C and a light intensity of about 750 $\mu\text{mol m}^{-2}\text{s}^{-1}$.

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Claim 29 (New): A method for protecting human skin, human hair or another surface from solar radiation, comprising topically applying thereto an effective amount of the composition of claim 9.

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Claim 30 (New): The composition of claim 1, wherein the carrier comprises a lotion or a cream.

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Claim 31 (New): The composition of claim 9, wherein the conditions of high excitation comprise culturing the photoautotrophic cell in a culture comprising nutrients and reactants.

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Claim 32 (New): The composition of claim 9, wherein the conditions of high excitation comprise exposing the photoautotrophic bacteria to a growth temperature comprising about an optimum growth temperature and a growth irradiance comprising about an optimum growth irradiance.